

## PLANT CONSERVATION CONCERNS IN RHODE ISLAND

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In 1973 an inventory of the "Natural Areas in Rhode Island" was completed under the joint sponsorship of the Rhode Island Audubon Society and the New England Natural Areas Project. 308 natural areas comprising 69,000 acres representing 9% of the total state area are designated. The Audubon Society maintains 7 wildlife refuge areas comprising over 1200 acres and owns as much again in the category of open space areas. The state of Rhode Island in addition maintains some 40 acres as state parks or state management areas.

Narragansett Bay and the associated islands, especially the islands of Rhode Island, Prudence, and Conanicut, bring the total coastline to 419 miles in length. Yet only 4000 acres of salt marsh remain unspoiled. In collaboration with other naturalists, particularly at the University of Rhode Island Coastal Resources Center, George L. Seavey has published an excellent and informative survey of 28 coastal natural areas needing formal protection and management.

Richard L. Champlin of Jamestown, R.I. is a well known naturalist whose extensive knowledge of the state flora has contributed liberally to these surveys.

In 1978 Professor Irene H. Stuckey of the University of Rhode Island published "Endangered Plants of Rhode Island" illustrated with 16 exceptionally fine color plates. Over 300 species are listed.

As a contribution to the project of the New England Botanical Club Committee on Rare and Endangered Species, George L. Church compiled in 1972 a list entitled "Species of Vascular Plants that are Rare, Scattered or Endangered in their Rhode Island Distribution". Initially based on specimens in the herbarium of the New England Botanical Club as well as those in the herbarium of Brown University, the notes as to stations and habitats were augmented by consultations with Elmer A. Palmatier, George L. Seavey, Richard L. Champlin, and the late Albert E. Lownes. The list was never published but is available from the author or William D. Countryman, the committee chairman.

In the current report by Church and Champlin on "Rare and Endangered Vascular Plant Species in Rhode Island", published by

the U.S. Fish and Wildlife Service, the authors have reduced the list of 190 species in the 1972 report to 124. The co-author Champlin has for many years made careful observations of the flora of the state and has delineated the areas of particular concern described in this paper.

BEAVERTAIL POINT consists of a small, rocky coastal area on the southern tip of Conanicut Island in lower Narragansett Bay. Most of the area is under the jurisdiction of the U.S. Coast Guard, which operates here one of the oldest known lighthouses. It is a well known area for the study of marine algae, migrating monarch butterflies, and many unusual birds such as snowy owls and razor-bill auks. It is, of course, a very popular place for visitors.

In October of this year, Champlin discovered a colony of *Eupatorium leucolepis* var. *novae-angliae* of about 25 plants in a nearby boggy meadow. This variety, first described from Plymouth County, Mass. by Fernald in 1914, was also known from a single station in southern Rhode Island where it has not been seen for some years. The habitat of the new station is about 50 feet above the shore and salt sprays are frequent. Associated species include *Spiraea tomentosa*, *Verbena hastata*, *Vaccinium macrocarpon*, and *Dioscorea villosa* at about the northern limit of its range. Shrubs include both the southern *Viburnum dentatum* and the northern *Viburnum recognitum* at a meeting of the range limits of each. *Baccharis halimifolia* is known from a salt marsh in South Kingstown where Stuckey reports it to be increasing lately due to salt spread on an adjacent road in winter. Only 3 plants were found this year at Beavertail. *Lycopodium alopecuroides*, new to the state in 1977, is here at its only Rhode Island station. *Ophioglossum vulgatum* is found here and at the only other station at Wallum Lake in the northwestern part of the state. *Liparis loeselii*, which seems to have disappeared from several sites, was seen here last year by the hundreds.

The land, which is owned by the U.S. Navy, is about to be transferred to the state in order to build a public park. Plans include the construction of a parking lot and a road through this area of botanical interest which is thus very definitely threatened.

The LIME ROCK area in the town of Lincoln is the only extensive outcropping of limestone in the state. On the edge of a working lime quarry is the only known station in the state for *Pellea atropurpurea*, which, however, is a population of about 100 plants. Here,

also, is the only extant station for *Parnassia glauca*. On a single boulder is the only station for a few plants of *Camptosorus rhizophyllus*. Nevertheless, this site has been observed for over 100 years! In nearby woodlands may be found a few plants of *Liparis liliflora*, represented only by very small stands at three other sites in the western part of the state. *Cornus rugosa*, observed in a small stand here last year, was noted also only in a very threatened station at Huntinghouse Brook in North Scituate. Other rarities include *Hepatica americana* at its only reasonably abundant stand as well as a few plants of *Viola pubescens*.

This unique area is becoming increasingly difficult to protect with businesses and the limestone industry encroaching on one side and housing developments on the other.

The south side of the HUNTINGHOUSE BROOK area in North Scituate includes an area of rich botanical interest but unfortunately without a clear record of ownership. Here is the only station in the state for *Acer spicatum*, *Adlumia fungosa*, and *Sanguinaria canadensis*. Only one other station is known for *Asclepias quadrifolia* and three others for *Liparis liliflora*. Other rarities include *Cypripedium calceolus*, *Habenaria hookeri*, *Habenaria hyperborea*, *Adiantum pedatum*, and *Botrychium virginianum*.

The future integrity of this natural area is very much in doubt. Lately, new houses have been constructed adjoining the wild area and traffic, including that of motorcycles, is increasingly threatening. After recent visits, Champlin thinks that the area is unfortunately beyond protection.

The CLEAR RIVER area at Burrillville in the northwestern corner of the state presents a rather northern aspect with *Acer pennsylvanicum*, *Taxus canadensis*, *Viburnum alnifolium*, and *Streptopus roseus*. *Dalibarda repens* was found here last year for the first time in Rhode Island. It is the only station for *Aletris farinosa* in any abundance and the only extant site for *Malaxis uniflora*.

A power line as well as a natural gas line bisect this area but fortunately as yet without harm to the rich flora.

In the nearby ROBBINS BROOK area is a dense tamarack-spruce bog with occasional *Chamaecyparis thyoides* and including a few plants of the rare *Rhododendron canadense*, *Menyanthes trifoliata*, and *Gaultheria hispidula*. The land is owned by the Boy

Scouts of Rhode Island, who have had plans to flood the area. At present, however, there appears to be a lack of interest in continuing with such plans.

The BOWDISH RESERVOIR floating islands, adjacent to the interstate highway in Glocester, carry such Rhode Island rarities as *Andromeda glaucophylla*, *Kalmia polifolia*, *Picea mariana*, and the only station for *Arceuthobium pusillum*. *Larix laricina* and *Eriophorum spissum*, originally here, have disappeared.

The water level needed to maintain these species is controlled by a dam. Although the shore is largely owned by local residents, there seems to be no clear title to ownership of the reservoir. Local residents may charge a fee to cross to the islands by boat and there is the possibility of access being denied.

The state owned DURFEE HILL management area in West Glocester contains sandstone cliffs about 150 feet in length where Champlin discovered the only station in the state for *Asplenium montanum* in 1961. It is still flourishing in rock crevices, along with the widespread *Polypodium virginianum*. The *Asplenium* is at the northeastern limit of its range. The area is not supervised and occasional vandalism has been noted.

In West Greenwich is one of five stations in the state for *Lygodium palmatum* where the site is rather remote and safe from immediate development hazards. The station of two acres, however, is all privately owned.

A pine barrens area in South Kingstown is owned by a gravel company and the integrity of the station for *Hudsonia tomentosa* in a pure stand of *Pinus rigida* could be threatened.

This past year Champlin found a small colony of *Helianthemum dumosum* along Narrow River in Saunderstown in dry soil with *Cetrarea islandica* and *Quercus velutina*. The Block Island stations reported by Fernald in 1913 and 1914 as well as the Tucker Pond station on the mainland have not been observed for some time. However, Stuckey reports 10 plants on a Block Island site in 1977.

*Isotria medeoloides*, the Small Whorled Pogonia, is one of the well known rarities on the Federal Register of endangered species and a history of field observations made on this orchid in Rhode Island over the last 30 years is of particular interest. The site in Glocester is on privately owned land, yet the owner is unknown! An adjacent woodlot has recently been cleared and a new house built

upon it. In 1970, the witch-hazel brush on the land was cut away without the cutters being aware of the presence of the orchid.

The station was discovered in 1947 by the late Charles Bryan, who reported 17 plants; later in September of that year he counted 28 plants with the late John Hudson. In the course of the next five years, the colony varied from 20 to 36 individuals. Lewis Carpenter and Richard Champlin have noted declining numbers in the population over the last 20 years and only four plants remained last year.

The surrounding vegetation within a 25 foot radius includes: *Clethra alnifolia*, *Hammamelis virginiana*, *Azalea nudiflora*, *Fraxinus americana*, *Quercus rubra*, *Acer rubrum*, *Ilex verticillata*, *Gaylussacia frondosa*, and *Lycopodium obscurum*.

It is obviously difficult to predict the future for this population of *Isotria*. It may go into a dormant period which in some cases has been reported to be 10–20 years. The land may be cleared or natural forest succession may eliminate the stand. Then again, the orchid may survive simply by being overlooked in a not so unusual ecosystem.

At the only other station for this orchid in Rhode Island at West Greenwich, Lewis Carpenter observed 23 plants in 1957 and the number dwindled to 4 in 1973. In the past year no plants could be found.

Perhaps, then, the best protection for *Isotria medeoloides* is to allow it to follow its own strategies for survival.

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